REMARKS

Claims 1 and 3-28 are pending in this application.

Claims1 and 3-28 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

The Office Action indicates that Claim 1 is indefinite because it recites in the preamble that the invention is directed to leak detection, but recites no reagent. Here in lies the novelty of the instant application. The dye precursor is not a reagent that reacts with the leaked chemical that it is intended to be detected, but reacts with a developer to cause a color alteration of the strip. **The color alteration on the test strip results from having the microcapsule come into contact with a leaked chemical**, thereby releasing the encapsulated dye precursor from the microcapsule. This allows the dye precursor to react with the developer, thereby producing the color alteration of the test strip.

The language currently contained in claim 1 clearly and distinctly claims the subject matter which applicant regards as the invention.

The Office Action stated the claim 1 is vague and indefinite because the examiner was unable to determine what structure is contemplated by the claimed "microcapsule."

Claim 1 itself defines that any type of microcapsule is suitable for use provided that it has a shell to enclose the color forming composition which comprises a dye precursor encapsulated in a microcapsule having a shell, a developer and, optionally, a filler. Also, pages 21-24 in the original specification clearly describe how to produce

microcapsules, and the appropriate microcapsule structures that can be used to practice the claimed invention. Therefore, claim 1 is not vague or indefinite.

Claims 3-28 depend directly or indirectly from claim 1 and, as such, are not indefinite because claim 1 clearly defines the technical features of the leak detection method recited, and the microcapsule structures of the test strip. Claims 3-28 define various embodiments that produce the color alteration of the test strip by employing a variety of color forming chemistries in sufficient detail to inform a person skilled in the chemistry of dye formation.

In view of the above remarks, the rejection of claims 1 and 3-28 under 35 U.S.C. 112, second paragraph, as being indefinite should be withdrawn and claims 1 and 3-28 should be allowed. Reconsideration and withdrawal are requested.

Claims 1 and 3-28 are rejected under 35 U.S.C. 103(a) as being anticipated by U.S. Patent No. 5,447,688 (Moore) in view of Derwent 1985-090152 (Derwent).

Moore describes a detector for a fugitive emission from a component containing a gaseous or volatile analyte. The device includes (a) a substrate for disposition adjacent the component from which the analyte is emitted; (b) an analyte reactive reagent; and optionally (c) an indicator. See Col. 2, lines 43-50. The analyte in Moore's is the leaked chemical that is to be detected. See Col. 14, lines 5-10. The detector disclosed by Moore cannot work without the leaked chemical reacting with an analyte reactive reagent. There is a chemical reaction between the analyte reactive reagent and the leaked chemical that transforms the reagent to enable the detection of the leaked chemical. That is, the leaked chemical is employed as a reagent or analyte that chemically changes the reagent to elicit a color change. In some cases the analyte

reactive reagent and the leaked chemical do not produce a color and a third reactive component, an indicator, is needed to produce a color.

Derwent describes a high-sensitivity immunoassay reagent that uses microcapsules sensitized with antigen or fluorescent material in their core. The fluorescent substance in the core of the microcapsule gives an image of higher contrast.

Claim 1 provides a test strip that does not employ the leaked chemical as an analyte or reagent. Claim 1 specifically recites a test strip that includes all the components needed to detect the desired chemical, i.e., it recites the color forming material (dye precursor) encapsulated in a microcapsule, and a developer that causes the precursor to show a color. The detected chemical does not react with the precursor or the developer – hence neither reacts with the leaked chemical that is to be detected, i.e., there is no reagent and leaked chemical reaction. It is actually the microcapsule that is susceptible to diffusion, dissolution, or rupture when exposed to the leaking organic vapor intended to be detected, that enables the precursor to contact the reagents external to the microcapsule. See page 23 of the original disclosure.

Applicants contend that the combination of Moore and Derwent fails to disclose or suggest all the limitations of claim 1. There is no chemical reaction between the leaked chemical and the components of claim 1 that are responsible for the color alteration. That is because, **unlike Moore, the method recited in claim 1 does not employ the leaked chemical as an analyte or as a reagent.** The leaked chemical instead acts as a solvent that by way of a physical process facilitates physical contact between a dye precursor and a developer. The leaked chemical acts as a solvent upon the microcapsules, which leads to contact between the dye precursor and the developer. Hence, the language in claim 1 stating, "wherein said color alteration on said test strip results from having said microcapsule come in contact with said chemical,

thereby releasing said encapsulated dye precursor...." In addition, unlike Moore, the dye precursor of claim 1 is altered by the developer (a component of the test strip) not the detected chemical. **In the method of claim 1, the detected chemical does not react with a reagent to cause the color change**. Accordingly, Moore does not describe a method of detecting a leaked chemical where the leaked chemical is detected by contacting a microcapsule that releases a dye precursor that produces a color alteration when contacted by a developer on the test strip, i.e., **no reagent is contacted with the leaked chemical to produce the color alteration.**

Additionally, both the dye precursor and the developer are on a support material, isolated by the microcapsules while in the pre-test or pre-analysis condition. Moore describes a detector where one reactive component is in the detector (i.e., the analyte reactive reagent), and the other is in the ambient environment (i.e., the leaked chemical). Consequently, Moore does not teach a test strip where both the reactive components are placed on a support material in the pre-test or pre-analysis condition.

The statement in the Office Action, indicating that Moore discloses a leak detector that contains all the appropriate indicators and developers to provide a colorimetric indication of a chemical leak, is not correct. One reagent required for the reaction is an analyte-reactive reagent, the other reagent (the analyte) is the leaked chemical that is to be detected. Therefore, Moore does not disclose or suggest a test strip, containing all the appropriate indicators and developers needed to detect a chemical, in a single test strip.

The function and steps of the testing method described by Moore is entirely different than the testing method recited in claim 1. Moore requires an analyte reagent that reacts with the leaked chemical. The reagent is chemically altered to bring about a color alteration. Claim 1 does not use a reagent that reacts chemically with the leaked

chemical, and the color alteration is caused by contact between the dye precursor and a developer that is already on the test strip. **Claim 1 does not implement a reagent/leaked chemical reaction that is so prevalent in conventional chemical detection methods.** In light of the arguments above, it is clear that the Moore test kit cannot function without having the analyte reagent chemically altered by the leaked chemical. The test kit in Moore will not function if the analyte reagent cannot contact the leaked chemical.

Finally, Derwent is silent regarding all the steps of claim 1 missing from Moore that are described above. Thus, the combination of Moore and Derwent fails to disclose or suggest all the elements of claim 1. Specifically, the Office Action correctly indicates that Moore is silent as to the microcapsules and the claimed support materials and indicators of claim 1, and **Derwent is cited as support for incorporating reagent into microcapsules, and nothing more.** Given the arguments above it is clear that Moore is missing much more than merely the disclosure of a microcapsule.

Derwent is cited as teaching only the use of microcapsules with reagents to produce higher image contrast and sensitivity. But the fluorescent substance described in Derwent is not a reagent, and the higher contrast image and sensitivity is not caused by encapsulating the fluorescent substance in a microcapsule, but the fluorescent substance alone brings about the enhanced image contrast and sensitivity described in Derwent. Also, the microcapsules in Derwent are used with fluorescent substances and no suggestion of motivation is offered to insert a dye precursor inside a microcapsule to provide the chemical detection method recited in claim 1. The creative aspect of the method provided in claim 1 is that the leak detection method can produce a color alteration in the presence of the specific leaked chemical **without requiring the chemical alteration of a reagent by the leaked chemical being detected**. Therefore,

Derwent does not cure the defects of Moore, and the combination of Moore and Derwent fails to disclose all the elements of claim 1.

Moreover, the modification of Moore suggested by the examiner in which the reagent of Moore is incorporated into a microcapsule would render Moore unsuitable for its intended purpose. Moore describes a test kit that detects a leaked chemical by contacting the analyte reagent with the leaked chemical. Thus, the reagent needs to be exposed to the surrounding environment or the reagent will be unable to react with the leaked chemical. Enclosing the reagent in a microcapsule would render Moore's test not only unsuitable for its intended purpose, but also completely inoperable. Any leaked chemical would go undetected because the microcapsule would shield the reagent from the chemical, and no color alteration could occur. Derwent offers no support for the proposition that the microcapsules it discloses can be combined with Moore to arrive at the invention recited in claim 1. In fact, everything in those two articles points to the inoperable nature of such a combination. Therefore, the modification of Moore as suggested in the Office Action is improper, and claim 1 is not disclosed or suggested by the combination of Moore and Derwent.

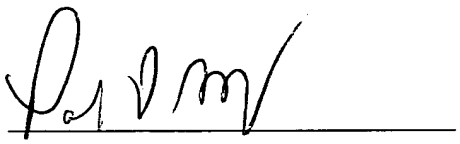
In view of the arguments above, there is no disclosure or suggestion in Moore and Derwent, alone or in combination, of all the limitations of the method recited in claim 1. Additionally, the combination of Moore and Derwent was improper. Accordingly, the rejection of claim 1 under 35 U.S.C. 103(a), as being obvious in view of Moore and Derwent, should be withdrawn. Therefore, claim 1 is in condition for allowance. Reconsideration and withdrawal are requested.

Claims 3-28 depend directly or indirectly from claim 1 and, as such, are in allowable condition as well. Reconsideration and withdrawal are requested.

In view of the above, it is respectfully submitted that the present application is in condition for allowance. Such action is solicited.

If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

Respectfully submitted,

Date: February 26, 2007 By: 

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